REMARKS

A petition for a one (1) month extension of time is submitted with this Amendment.

Claim 13 stands objected to for informalities and claims 1-13 stand rejected on prior art grounds. This amendment adds claim 14.

Specifically, claims 1, 3-5, and 11-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Li (U.S. Patent No. 6,549,587) in view of Anandakumar (U.S Pat. No. 6,574,213). Claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Li in view of Leiper (U.S. Pat. No. 6,112,234). Claims 6-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Li in view of Anandakumar. Claim 13 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Li in view of Bechtolsheim (U.S. Pat. No. 6,515,963).

These rejections are respectfully traversed in view of the following discussion.

I. THE PRIOR ART REJECTIONS

THE LI AND ANANDAKUMAR REFERENCES

The Examiner alleges that claims 1, 3-5, and 11-12 are unpatentable over Li in view of Anandakumar. Applicant submits, however, that there are elements of the claimed invention which are neither taught nor suggested by the Examiner's alleged combination of references.

Li discloses a local modem connection established on each end of a packet

based network 494. (Li, col. 53, lines 17-20) The connection comprises a local calling modem connected to a local calling gateway through the PSTN, where the calling gateway is connected to a answer gateway on a packet network. An answer modem is connected to the answer gateway through the PSTN. (Li, Fig. 23).

Anandakumar discloses a process for sending packets for voice over IP (VoIP), voice over packet (VOP) and media over packet networks. (Anandakumar, col. 5, lines 55-60). Adaptive delay and delay-jitter handing mechanisms are incorporated with speech, audio, video using a "path diversity" to transmit "diversity packets" that are placed into separate paths, or flowstreams, creating a multiple path network of the same data to an endpoint. "By having multiple paths, or causing multiple paths to be accessed, used, and traversed, such path diversity processes. . . reduce . . . packet loss, delay, jitter, and other less than desirable metrics of performance" for VoIP/VOP systems. (Anandakumar, col. 7, lines 44-55; col. 8, lines 55-67).

Applicant submits that Li would not have been combined with Anandakumar, as alleged, to produce the claimed invention. The Examiner has admitted that "Li . . . fails to expressly disclose the step of determining the transport efficiency of said packet network by comparison of said known throughput rate of said reference modem data stream and to said determined throughput rate of said received modem data stream." (OA, p. 3). However, Anandukar fails to makeup for Li's deficiencies. The Examiner alleges that the motivation to combine "Li's modem relay packet network to utilize the quality of service setup in determining transmission efficiency and packet loss rates, as

shown by the PSTN-packet network system of Anandakumar," is the "obvious need for a system to control packet loss, jitter, and delays." (OA, p. 4, paragraph 1). This is an incorrect analysis of combining the references to produce the claimed invention.

Controlling jitter and delays and packet loss is merely a general statement that could be made for any packet network in the world. The claimed invention includes comparing throughput rates of a "reference modem data stream at a known throughput rate" and a "determined throughput rate of said received modem data stream," as recited in claim 1. Neither reference has motivation or suggestion to combine in order to compare two modem data rates, as described in the claims, in order to determine a transport efficiency through a packet network.

Anandakumar discloses a "path diversity" using multiple paths in a network to send the same packet data for a VoIP network using real-time voice. This is a far, far different system than is needed for a modem data relay system that requires modulation and demodulation of data signals. Anandakumar does not disclose how his system of multiple path diversity could be, or can be, used in a modulation/demodulation scheme. Different ITU protocols, different software, different packet formats, different modulation/demodulation protocols, and different sending and receiving codecs are used in Li's and Anandakumar's systems. In a non-limiting exemplary embodiment, in order to establish and maintain a modem connection over a packet network, "the originating and terminating gateways must have a common modem relay unit packet format . . . [that] consists of a sequence number, kind stand,

modem handshake, modem relay protocol and modem data. . . ." (Application, p. 17, lines 14-19). Further, Anandakumar's methods of path diversity to compensate for jitter and delay would not be an advantage over Li's modem relay system because Li already has a method for compensation for jitter and delay. The alleged combination, which would only produce the disclosure of Li since Li already compensates for jitter and delay, adds no disclosure to Li that would teach Applicant's claimed invention. Li recites "Additionally, the packet data modem exchange compensates for system clock jitter between modems with a dynamic phase adjustment and resampling mechanism. Spoofing may also be provided during various stages of the call negotiation procedure between the modems to keep the connection alive." (Li, col. 53, lines 38-44). In such a combination, one skilled in the art would recognize that Anandakumar's methods and systems are not compatible with Li's modem data relay mode, are unnecessary, and does not add advantages to Li's disclosure to produce the claimed invention.

The Examiner has failed to make a requisite showing of the teaching or motivation to combine the prior art references. Thus, there is no reason one skilled in the art would combine Li with Anandakumar to produce the claimed invention, absent hindsight. The obviousness rejections for all the presently pending claims are impermissible and should be withdrawn.

Further, the Examiner has attempted to identify in separate pieces of prior art each individual part claimed in the Application. This is insufficient to defeat patentability of the whole claimed invention. See In Re Werner Kotzab, 217 F.3d 1365, 1370 (Fed.

Cir. 2000). The Examiner cites delay-jitter handling approaches for voice packet transmissions in Anandakumar with a modem relay connection of Li. Yet this reference-by-reference, limitation-by-limitation analysis fails to demonstrate how the Li and Anandakumar references teach or suggest their combination to yield the claimed invention. To the contrary, the obviousness analysis in the Examiner's rejections are limited to a discussion of the ways that the multiple prior art references can individually be read on different elements of the claimed invention. Nowhere does the Examiner particularly identify any suggestion, teaching, or motivation to combine the references, nor does the Examiner make specific--or even inferential--statements concerning the identification of the relevant art, the level of ordinary skill in the art, the nature of the problem to be solved, or any other facts that might serve to support a proper obviousness analysis.

However, even if combined, the combination of Li with Anandakumar fails to teach or suggest the claimed invention. The Examiner alleges col. 20, lines 4-52 and col. 34 lines 28-43 in Anandakumar discloses "a voice-over-IP communications system that uses quality of service parameters to maintain transmission accuracy and efficiency," and discloses an adaptation embodiment that uses a throughput estimate for both delay-jitter handling approaches and compares a ratio of a corresponding throughput estimate to current overall transmission rate with a threshold, as well as determining a packet loss rate through various combinations of source rate, time diversity and path diversity (OA, p. 3). The passages from Anandakumar, however,

merely disclose estimating a transmission rate and jitter rate on a single transmission of a VoIP system.

First, QoS features of a VoIP system and a modem relay system cannot be analogized to one another since the systems, as described above, operate differently under different protocols and use different setup and connection procedures. Further, Anandakumar discloses "compares a ratio of a corresponding TCP throughput estimate to current overall transmission rate with a threshold [of QoS]. (col. 20, lines 40-45). The combination of references fails to teach or suggest "for providing a reference modem data stream at a known throughput rate to at least one of said gateways; and for receiving a transported modem data stream from a second one of said gateways after said reference modem data stream has passed through said gateways and said packet network," as recited in claim 1. In Anandakumar, "New RTCP reports of Jitter J now enter the buffer one by one, and are each respectively compared with the Original Value as stored," where the "Original Value" is the "oldest of the n+1 Jitter values" if n Jitter increases occurs (Anandakumar, col. 20, lines 21-24). In other words, Anandakumar's method compares a TCP throughput for a single current data stream to an "overall transmission rate" for the same data stream and then compares this to the Original Value for jitter of the same data stream.

In contrast to comparing a single data stream's jitter at one point in time to the same data stream's overall jitter rate, the claimed invention determines transport efficiency of a packet network of a reference modem data stream to "said determined

throughput rate of said received modem data stream," as recited in claim 1. The QoS "threshold" alleged by the Examiner to render the present invention obvious is nothing more an arbitrary value inversely proportional to the overall packet loss rate of the same single VoIP data stream described in Anandakumar col. 20. (Anandakumar, col. 14, lines 2-7). Thus, there is no teaching or suggestion of a "reference modem data stream" in by Anandakumar. Since the claimed "transported modem data stream" is received by a gateway "after said reference modem data stream has passed through said gateways and said packet network," as recited in claim 1, the claimed determination of modem relay efficiency of two different data streams cannot possibly be taught or suggested by the combination of references.

Regarding the rejection to claim 13, the Examiner alleges Li and Anandakumar performance calculations are made "continuously, since data is constantly transmitting" and this understanding discloses "where the determination of the transport efficiency includes at least two iterative repetitions of said provision of said reference modem data stream and said reception of said transported modem data stream and said comparison . . ." as recited in claim 13. However, as described above, the combination does not teach or suggest a provisioning a reference modem data stream and a second transported modem data stream and therefore fails to teach or suggest iterations of the two data streams and further comparison and averaging the efficiency of the results.

THE BECHTOLSHEIM REFERENCE

The Examiner further alleges Li in view of Bechtolsheim discloses determining the average rate for a given protocol with given network conditions in claim 13. Bechtolsheim is a disclose for managing traffic flow in routers and switches using classic network buffering and traffic policing. (col. 1, lines 5-10; lines 32-40; col. 2, lines 11-15). One skilled in the art would not have combined Li with Bechtolsheim as alleged. Li's disclosure is for maintaining a QoS on a VoIP/VOP data flowstream and has no relevance to policing or buffering packets from a "variety of traffic sources or flows presented to the router/switching device . . . [where] [t]hese flows each consist of multiple packets of data, in a variety of sizes and presented at a variety of rates . . . and different protocols." (Bechtolsheim, col. 1, lines 33-40). Bechtolsheim is a far different technique than is than described by the claimed invention and even disclosed by Li. Combining these two references is clearly hindsight. However, even if combined, the alleged combination would not teach or suggest the claimed invention.

The Examiner admits that "Li fails to disclose where the steps of collecting a group of data representative of the network throughput efficiency under a number of network conditions and corresponding to a plurality of known file transfer protocols; determining the network efficiency . . . and generating a representation of the relationship between modem relay system design and packet transport efficiency . . ." (OA, p. 8). Applicant asserts that Li also does not disclose the adaptation embodiment described in paragraph 7 of the Office Action. Therefore, no prior art citing

comparisons of packet throughputs is cited against claim 13.

Further, the Examiner alleges the dynamic buffer management scheme for a data communications device of Bechtolsheim discloses the claimed invention. First, the network buffering and policing scheme of Bechtolsheim has no relevance and cannot possibly teach or suggest "determining the network throughput efficiency values corresponding to a plurality of file transfer protocols and determining the average rate for a given protocol with given network conditions; and generating a representation indicative of the relationship between modem relay system design and packet transport efficiency across said network," as recited in claim 13. Bechtolsheim is not concerned with determining throughput efficiency values and developing relationships for a given protocol with a modem relay system design. Bechtolsheim is a disclose for *traffic shaping* on a network. As described in *Designing Large-Scan LANS* by Kevin Dooley (O'Reilly & Assoc., 2002), p. 265-266,

> There are two main ways to control the rate of flow of traffic. A device can either throw away packets whenever the specified rate limit is reached, or it can buffer packets and release them at the specified rate. The process of discarding packets that exceed a bandwidth parameter is usually called *policing*. Saving packets for future transmission is called *buffering*.

The claimed invention is for modem relay technology, not designing LANs using buffering and policing techniques. For at least the reasons above, claim 13 is not rendered obvious by the alleged combination.

For at least the reasons stated above, Applicant respectfully submits that the

Examiner's alleged combination of references fails to teach or suggest claim 1 and 12 and these claims are fully patentable over the cited references. Further, Applicant submits that claims 2-11 and 13 are patentable not only for their dependence upon patentable claims, but also for the reasons listed above.

Based on the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections.

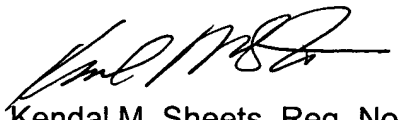
III. FORMAL MATTERS AND CONCLUSION

Applicant has amended the specification and claims to overcome the Examiner's objections. Applicant submits that claims 1-13, all the claims presently pending in the Application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above Application to issue at the earliest possible time.

Should the Examiner find the Application to be other than in condition for allowance, the Examiner may contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any fees associated with this communication to Client's Deposit Account No. 20-0668.

Respectfully submitted,



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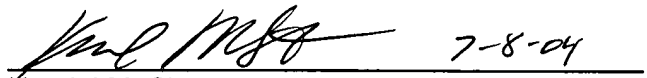

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